Massachusetts

Yearly Operational Plan

2017

Unitil Corporation

Fitchburg Gas and Electric Light Company

285 John Fitch Highway

Fitchburg, MA 01420-8207

April 2017

TABLE OF CONTENTS

APPENDICES

Summary

The purpose of this Yearly Operational Plan (hereafter referred to as "YOP") is to outline the Fitchburg Gas and Electric Light Company[1] (hereafter referred to as FG&E or the Company) 2017 program for managing vegetation with herbicides on the rights-of-way. This program and YOP have been developed in compliance with 333 CMR 11.00, rights-of-way management regulations administered by the Massachusetts Department of Agricultural Resources (DAR).

In compliance with 333 CMR 11.06 and 11.07 and Chapter 85 of the Acts of 2000, the YOP notification process provides for a forty-five day public review and comment period which starts when the Department of Agricultural Resources (DAR) publishes a notice in the Environmental Monitor, a twenty-one day review period for the municipal notification letter (may run simultaneously), and a 48 hour newspaper notice. These review periods give communities an opportunity to provide information that help identify additional areas that may require specific precautions or protection.

Under the supervision of the FG&E System Arborist and staff, herbicide applications are made in the context of an Integrated Vegetation Management (IVM) program that also utilizes mechanical and biological controls and takes into consideration the cultural use of the landscape. This IVM program is outlined in our Five-Year Vegetation Management Plan (VMP), copies of which are available upon request or at:

http://www.unitil.com/energy-for-residents/electric-information/vegetation-management/managing-herbicides

FG&E retains independent, experienced contractors to perform the treatment applications. Herbicides are only applied by trained, licensed applicators using hand-held equipment under the direct supervision of certified supervisors.

Any questions or comments on this YOP should be directed to the contact person listed in Section 9 of this YOP.

1: Introduction

In compliance with 333 CMR 11.00. Rights-of-Way Management, FG&E's YOP outlines our 2017 vegetation management program on specified (see Section 2) electric transmission rights-of-way. This YOP is consistent with the terms and procedures set forth in FG&E's 2014-2018 Vegetation Management Plan (VMP); with all pertinent clauses is Chapter 85 of the Acts of 2000; with the Massachusetts Endangered Species Act (MESA; M.G.L. chapter 131A) and its regulations, 321 CMR 10.00; and the Massachusetts Wetland Protection Act (M.G.L. chapter 132A) and its regulations, 310 CMR 10.00 of the Massachusetts Department of Environmental Protection; and with all state and federal laws and regulations that apply to right-of-way vegetation management in the Commonwealth of Massachusetts.

The purpose of 333 CMR 11.00 is to establish a statewide and uniform regulatory process which will minimize the uses of, and potential impacts from, herbicides in the rights-of-way on human health and the environment while allowing for the benefits to public safety provided by the selective use of herbicides (333 CMR 11.01).

333 CMR 11.00 (see Appendix 2) is the most comprehensive rights-of-way regulation in New England. It requires an Integrated Pest Management (in this case IVM) approach to right-of-way vegetation management; the establishment of standards and procedures to prevent unreasonable risks to humans and the environment; and a multi-layered system of public and municipal notification that requests input about environmentally and culturally sensitive areas. All of this is outlined in FG&E's VMP and annual YOP's, the vehicles for establishing and implementing IVM programs, which serve as guides for the public, state and municipal officials, vegetation management contract personnel and FG&E.

FG&E manages approximately 350 acres and 30 miles of cross-country transmission rights-of-way and 410 miles of distribution right-of-way, located primarily along roads, through the municipalities of Ashby, Fitchburg, Lunenburg and Townsend. The work is carried out over a five year maintenance cycle.

The cross-country rights-of-way traverse uplands and lowlands typical of central Massachusetts. They traverse wetlands and uplands in three municipalities: Fitchburg, Lunenburg and Townsend. These municipalities are primarily rural and suburban, though portions of Fitchburg are urban. In all locations, the rights-of-way must be kept clear of vegetation that may interfere with the safe, reliable delivery of electric service. To achieve this goal, FG&E utilizes the IVM program described in the VMP and summarized in Section 3 below.

2: Location of Proposed Herbicide Treatments

In 2017 FG&E will carry-out IVM work on three sub-transmission line rights-of-way, in Table 1 below; the 06 line right-of- way from Summer St Substation #40 to Sawyer Passway Substation #22, the 08 & 09 lines right-of-way from Summer St Substation #40 to Townsend Junction, and the 08 lines right-of-way from Townsend Junction to Townsend Substation #15. The 06 line and 1.12 miles of the 08 & 09 lines are located in Fitchburg, encompassing 1.68 miles and approximately 20.4 acres to be treated in Fitchburg. The remaining 2.22 miles of the 08 &09 lines are located in Lunenburg, encompassing approximately 26.9 acres to be treated. The 08 line in Townsend is 3.31 miles in length and encompasses approximately 40.1 acres to be treated. In total, 7.21 miles, approximately 87.4 acres will be treated.

a. Integrated Vegetation Management Herbicide Treatments

Table 1: Rights-of-Way for 2017 treatments

Fitchburg Gas and Electric Light Company Right-of-Way Segments				
Line Number	Voltage	Description	Miles	Acres
06	69 kV	Summer Street Substation #40 to Sawyer Passway Sta. #22	0.56	6.8
08 & 09	69 kV	Summer Street Substation #40 to Electric Ave, Lunenburg and Chase Rd, Lunenburg to Townsend Junction	3.34	40.5
08	69 kV	Townsend Junction to Townsend Substation #15	3.31	40.1
		Total:	7.21	87.4

b. Tree Growth Regulator and Vine Control

Tree growth regulators (TGR's) can lengthen the time frame between maintenance pruning cycles and improve aesthetics of street and yard trees that may otherwise require removal or severe pruning. Vine control treatments will be done on poles and equipment where they interfere with operations and access. FG&E plans on conducting TGR treatment and vine control where necessary. Treatment will take place in conjunction with pruning work in Ashby and Townsend.

3: Integrated Vegetation Management, Including Alternative Control Methods

The Company proposes to use all appropriate IVM methods available including: mechanical, chemical, and biological control methods. Mechanical and chemical control methods facilitate development of a low-growing plant community that in time will become the biological control over the plant community.

The primary mechanical methods will be hand cutting with chainsaws, pruning and mowing. Chemical methods involve the use of herbicides applied in several ways including cut-stump treatment and low-volume foliar treatment. All methods except mowing are applied selectively.

The rate of tree height growth and density of incompatible vegetation will determine the length of the maintenance cycle. In central Massachusetts, other utilities typically employ a five-year maintenance cycle. Timing will likely vary from four to five years depending on results of inspections of re-growth rates of vegetation and density of vegetation.

Historically the Company has only used mechanical methods (mowing and hand cutting). Exclusive use of mechanical methods has resulted in right-of-way plant communities dominated by hardwood tree species. Hardwood tree species are fast growing and incompatible with electric utility facilities. Conversion to low-growing shrub, grass and forbe plant communities will require multiple cycles of mechanical and chemical treatments. Gradually, the right-of-way plant community will convert to low-growing species, requiring less mechanical and chemical treatment as the low-growing plant community exerts biological control.

While the range of IVM cycle length is likely to be four to five years, the Company will be flexible and avoid fixed schedules. Timing of vegetation maintenance will be based on inspections of rights-of-way. Inspections will include evaluation of incompatible vegetation height and density, compatible species composition, site access and topography. Maintenance of the electric facility may also impact timing of vegetation management work.

The advantage of a flexible IVM program is the ability to apply the appropriate mechanical and chemical methods to meet the conditions of individual rights-of-way. As the sole means to control vegetation, mechanical controls are a short-term solution. With the exception of most conifer species, cut vegetation re-sprouts, resulting in high density in-compatible vegetation. Selective herbicide application methods effectively remove this vegetation that would otherwise compete with and dominate the low-growing, early successional plant communities that provide biological control.

Mechanical methods are the preferred method for non-sprouting conifer species as well as in areas where use of herbicides is precluded, such as the no-spray areas associated with Sensitive Areas; in visual screens, around structures, on access roads; and where large areas of high

density in-compatible species exceed maximum herbicide treatment heights (12 feet). Mechanical methods are applied in combination with chemical methods for hardwoods over 12 feet tall – they are hand cut and stumps treated with herbicide.

Mechanical Methods:

Hand Cutting

Hand cutting is the mechanical cutting of vegetation using chain saws, brush saws, loppers or hand pruners. Hand cutting may be conducted at any time of the year. Target species are cut as close to the ground as practical. Slash from the cutting is cut and scattered so as to lay close to the ground – not to exceed two feet in height.

Hand cutting is used to protect environmental Sensitive Areas; around structures, gates and access roads; to control vegetation greater than 12 feet in height; where herbicide use is prohibited by regulation or easement restriction; on non-sprouting conifer species; and on sites where terrain, site sensitivity or site size makes mowing impractical.

Mowing

Mowing is the mechanical cutting of vegetation using large tree/brush mowers mounted on rubber tired tractors or tracked vehicles.

Mowing may be used at any time of the year except when deep snow prevents safe operation. Selection of specific equipment is based on terrain, vegetation size and equipment availability. Mowing is restricted by steep slopes, rocky terrain, obstructions, wet sites with deep soft soils and debris on the right-of-way.

Mowing is used on sites where herbicide use is prohibited by regulatory or easement restriction, where vegetation is tall and high density, and where terrain, site size and sensitivity permit the efficient use of the equipment.

Selective Pruning

Selective pruning is the mechanical removal of the tops or limbs of trees to prevent them from growing in to or falling on to the lines.

Selective pruning may be done at any time of the year. Pruning will be accomplished from the ground, using aerial lifts or by tree climbing crews.

This method is used in maintaining trees in visual screens adjacent to yards or roads and along the edges of rights-of-way to prune off-right-of-way trees.

Slash is the woody debris generated from pruning and cutting operations. Slash will be disposed of by dicing and cutting low to the ground, chipping, piling or removing from the site at the discretion of the Company. The preferred method of disposal is to dice and cut low to the ground and leave on the right-of-way to decay naturally.

Slash will not be left in waterways, trails or roads, or in such a manner that would permit it to wash into these areas. The placement of slash must comply with applicable State Fire Marshall regulations. Slash from yards or recreational sites will be chipped or removed to an adjacent area or removed. Chipping is used when dicing and cutting low to the ground are prohibited or impractical. Chips will be removed in highly sensitive sites. When left on site, wood chips will be scattered uniformly over the site at depths not exceeding three inches or piled on isolated areas. No chips will be left in wetlands.

Chemical Methods

Herbicide applications include cut stump and low volume foliar. Herbicides are applied as mixtures consisting of the herbicide formulation(s), adjuvants, carriers and additives. Herbicide materials and mix rates are detailed in Section 7 of this YOP and associated notices to municipal officials and newspaper notices. The Company will only use herbicides and mixes consistent with the *Sensitive Area Materials List* published by the Massachusetts Department of Agricultural Resources (DAR). The Company System Arborist will further specify to the contractor, the particular materials and mixture rates for individual rights-of-way according to conditions and timing of the treatments. Treatment crews will not deviate from the Company's specification without the approval of the System Arborist.

Each herbicide has varying degrees of efficacy on vegetation. Seasonal variations in rainfall and date of application also effect efficacy. No herbicide is equally effective on all species and certain herbicides are more effective on some species than others. The Company selects the herbicide or combination of herbicides in conjunction with the appropriate treatment method to obtain the most effective control of the in-compatible vegetation and density on each right-of-way.

Each herbicide and method of application has distinctive results with respect to "brownout" and timing of plant necrosis and environmental characteristics. Environmental characteristics such as rate of biodegradation and mobility in the soil are important to consider when prescribing their use. Some herbicide formulations are labeled for use in wetlands, others are not. The selection of herbicide or herbicide mixtures and the appropriate application method is made with consideration given to the visual and environmental sensitivity of a right-of-way or site within a right-of-way.

The environmental characteristics, rates of application and selectivity of the application method are critical parameters for consideration by the DAR in development of the *Sensitive Area Materials List*.

Methods of Application:

Selective Foliar Application

Selective foliar applications are made to fully developed leaves and stems of the incompatible vegetation. Selective foliar applications are limited to the season when leaves are fully developed, typically from June through early October.

The equipment for selective foliar applications include hand-pump backpack sprayers, motorized backpack sprayers and off-road vehicle mounted hydraulic sprayers. Applications are made as a uniform spray over the plant's entire foliage to dampen or lightly wet the vegetation, not applied to run-off. This application method minimizes the amount of herbicide applied and reduces impacts to desirable vegetation under and around the incompatible vegetation and deposition to the soil.

Selective foliar applications are used on hardwood trees and incompatible shrub species below 12 feet in height. Foliar applications are not used where landowner agreements preclude their use, within visual screens on incompatible species greater than 6 feet in height and within mechanical only sensitive areas per 333 CMR 11.04.

Foliar applications are allowed in wetland areas where no standing water is present, per the Department of Food and Agriculture Decision, dated October, 1995, concerning the wetland impact study conducted pursuant to 333 CMR 11.04(4)(c)(2), see Appendix 4.

Low Volume Basal Application

Low volume basal treatments are the selective application of an herbicide, diluted in specially formulated oil, to wet the lower 12 to 18 inches of the stem of incompatible plants. Application is made using a hand pump backpack sprayer. The oil carrier enables the herbicide solution to penetrate the bark tissue and translocate within the plant.

Low volume basal applications are very selective, and when used in low incompatible species density, are applied at low rates of herbicide per acre. Optimum vegetation density is low, with average heights greater than 4 feet, within visual screens and in areas where a high degree of selectivity is necessary. The application method can be used any time of the year except in conditions that prevent access to the target stems such as seasonal standing water or deep snow. The optimum treatment time frame is in the dormant season when applications are easier due to the lack of foliage and the

obstruction caused by grasses and herbaceous growth. Basal applications are not ideal in high incompatible vegetation densities due to the time and cost to apply, the likelihood of missing incompatible vegetation and resulting high level of application of herbicide per acre.

Low volume basal applications are used on the same species and vegetation heights cited above for foliar applications. Basal applications have the advantage of extending the application season into the dormant season. They also have the advantage of not creating brownout of vegetation.

Cut Stump Applications

Cut stump applications are the mechanical cutting of incompatible vegetation followed by herbicide application to the phloem and cambium tissue of the stump. The cut stump mixture is diluted in water or a non-freezing liquid carrier and is ideally applied to freshly cut stumps. Application equipment includes low-volume backpack sprayer, hand pump sprayer, hand held squirt bottles, paintbrushes and sponge applicators.

This application method is used where maximum selectivity is desirable and/or to reduce the visual impact of vegetation management work. It is commonly used to prevent re-sprouts when hand cutting vegetation in preparation for a foliar application, to apply herbicide to vegetation in sensitive sites where other methods are not possible, on all woody vegetation (except conifers) removed in visual screens except within environmentally sensitive areas where restrictions preclude herbicide use.

Cut stump applications may be used at any time of the year provided snow depth does not prevent cutting low to the ground. It is best to avoid application during the season of high sap flow, and/or moderate to heavy rain. It is not practical in moderate to heavy vegetation densities.

4: Identification of Target Vegetation

The primary target on an electric utility right-of-way is woody vegetation, primarily trees that are capable of interrupting the safe delivery of energy products to our customers. Other target vegetation includes: dense woody vegetation, vines, noxious, nuisance and poisonous vegetation: all vegetation that interferes with access around structures, access roads and trails, substations; and anywhere in which vegetation prevents access to the right-of-way for inspections, maintenance, repairs and emergency access to the lines.

With few exceptions, all target species will be removed or controlled during a treatment operation. Within the cleared width of the right-of-way, all tree species, except conifers less than two feet tall, will be removed or controlled.

Tree species are identified as woody plants that mature at heights exceeding fifteen feet, These trees must be removed because they are capable of growing tall enough to grow in to or fall on to the lines.

Except in no-spray sensitive areas, (see Section 5), hardwoods over 12 feet tall are hand cut and the stumps are treated with herbicides. Hardwoods less than 12 feet tall and woody species that present safety problems are treated with herbicides using either low volume foliar or cut stump application methods. As mentioned above, Pitch Pine is the only conifer species treated with herbicides.

Trees that need to be removed will be identified visually by trained treatment crews and include, but are not limited to the following:

Ash, Aspen, Beech, Birch, Cherry, Hemlock, Pine, Poplar, Maple, Oak and Willow.

All woody vegetation (trees, shrubs, vines) on or encroaching upon existing roads or pathways or immediately adjacent to line structures or equipment will be treated by mechanical or herbicide control methods. If no access along the right-of-way exists, a pathway will be created and maintained in a suitable location by treating all woody vegetation within the selected route. Woody vegetation must be treated in these areas to ensure access to and along the right-of-way and line structures for safe and efficient inspection, maintenance and repair operations.

Other plant species to be controlled include shrub and vine species and vegetation that because of heavy thorn growth or dermal toxicity may be hazardous including, but not limited to:

Alder, Bittersweet, Blackberry, Buckthorn, Bush honeysuckle, Grapevines, Greenbriar, Hawthorne, Japanese Knotweed, Multiflora Rose, Poison Ivy, Poison Sumac, Viburnums, Virginia Creeper and Winterberry.

Not all vegetation on the right-of-way are considered targets, in fact, most species are not targets. Desirable plant species that provide the natural controls in our IVM program include, but are not limited to:

Azaleas, Button bush, Chokeberry, Common Juniper, Dogwoods, High and Low Bush Blueberries, Huckleberry, Mountain Holly, Mountain Laurel, Privet, Rhododendron, Sedges, Shadbush, Sheep Laurel, Spirea, Sumac, Sweet Fern, Sweet Pepperbush, Viburnums, Ferns, Grasses, and Herbaceous species.

5: Sensitive Areas

For the purposes of this YOP Sensitive Areas regulated by 333 CMR 11.04 are as follows:

Any areas within rights-of-way, including No-Spray and Limited Spray Areas, in which public health, environmental or agricultural concerns warrant special protection to further minimize the risks of unreasonable adverse effects. AN illustration of sensitive areas and their associated no-spray and limited spray areas is included in Appendix 3 of this YOP.

Sensitive Areas include the following:

Water Supplies

- Zone I
- Zone II
- IWPA (Interim Wellhead Protection Area
- Class A Surface Water Sources
- Tributaries to a Class A Surface Water Source
- Class B Drinking Water Intakes
- Private Wells

Surface Waters

- Wetlands
- Open Water Bodies
- Rivers
- The Mean Annual High Water Line of a River
- The Outer Boundary of a Riverfront Area
- Certified Vernal Pools

Cultural Sites

- Agricultural Areas
- Inhabited Areas

Wildlife Areas:

- Certified Vernal Pool Habitat
- Priority Habitat

Protecting these environmentally sensitive sites is accomplished by defining specific sensitive areas and establishing limited spray and no-spray areas and treatment restrictions within these

areas based on the sensitivity of each site and the requirement to minimize any unreasonable adverse impacts within that area.

These sensitive areas consist of no-spray areas in which herbicides use is prohibited, larger limited spray areas where herbicide use is permitted under certain conditions, general limited spray areas and areas that require special treatment recommendations.

For the purpose of identification, sensitive areas are separated into those readily identifiable in the field and not readily identifiable in the field:

1. Sensitive area readily identifiable in the field will be treated and marked according to all applicable restrictions listed in 333 CMR 11.00 and FG&E's VMP. These areas include but are not limited to rivers and streams, surface waters, wetlands, inhabited areas, agricultural areas and road buffers.
2. Sensitive areas not readily identifiable in the field are identified by the use of the data on Company maps and additional data collected in the YOP and notification processes before the time of treatment. These areas include, but are not limited to public ground water supplies, public surface water supplies and tributaries and private wells, Priority Habitats, certified vernal pools, landowner agreement areas and easement restrictions.

Sensitive areas will be identified using many resources from the following list:

1. FG&E right-of-way maps, records and institutional knowledge,
2. Massachusetts Department of Environmental Protection water supply maps and/or GIS mapping layers available through Mass GIS,
3. DAR, Municipal Board of Health maps and lists, and FG&E records of identified private wells along the right-of-way,
4. Correspondence, meetings and input from municipalities within the forty-five day YOP and twenty-one day municipal right-of-way notification letter review and comment periods and the 48 hour newspaper notification (under 333 CMR 11.06 & 11.07 and Chapter 85 of the Acts of 2000),
5. Correspondence and meetings resulting from FG&E's abutter notification procedure,
6. A crew point person who verifies identified sensitive areas and any additional areas that may require special precautions,
7. USGS topographic maps,
8. Information from the contractor's knowledge and records,
9. Information from MassGIS,
10. Confidential information from NHESP, and copy of the YOP and VMP.

As appropriate, sensitive areas will be identified and marked in the field by either FG&E personnel, trained and experienced vegetation management contract personnel and or by individuals trained in the identification of sensitive areas.

Priority Habitat of State-Listed Species

In compliance with 321 CMR 10.18, Massachusetts Endangered Species Act Regulations, Part II Exemptions, FG&E has submitted this YOP for approval by the NHESP.

Under the approval process, details about the Priority Habitats of State-listed species that our activities might affect and management recommendations are shared with FG&E under strict confidentiality agreements. Using this data and best management practices, FG&E and contract personnel will follow the appropriate vegetation management treatment methods within these sensitive areas. To identify Priority Habitats, FG&E and vegetation management contract workers are trained to recognize Priority Habitats using paper maps and/or GIS systems. Particularly sensitive State-listed species will be reviewed and identified in the field for protection by NHESP approved biologists.

Treatment in Wetlands

Pursuant to 333 CMR 11.04(4) and based upon two right-of-way wetland impact studies, the Massachusetts Department of Food and Agriculture (now DAR) in consultation with the Department of Environmental Protection and the Right-of-Way Advisory Panel, made a determination that utilities may treat target plant species, except pines, selectively with herbicides in wetlands, under the guidance of an IVM program and with sensitive area approved herbicides except within ten feet of standing or flowing water.

6: Description of Maps Locating the Rights-of-Way

YOP maps locating the rights-of-way and sensitive areas not readily identified in the field will be prepared and are attached to this YOP in Appendix 1. These YOP maps will be sent to municipal officials per notification procedures discussed in Section 5.

These maps include the most current data available at the time of printing. To insure that applicable sensitive areas are identified on the maps, FG&E is requesting municipal verification of areas currently mapped and the identification of any additional areas not mapped.

The maps are resources and a tool for the public and vegetation management contractors, therefore, they contain data needed to identify, mark and treat sensitive areas appropriately at the time of treatment. Additional sensitive area information that is collected will be added to the information utilized by FG&E's vegetation management contractors. Please note that Zone II's are included on the maps, however, FG&E only uses herbicides approved for use within this limited spray sensitive area.

7: Proposed Herbicides, Carriers, Adjuvants and Rates

The following table shows the proposed herbicides, tank mixes, application methods and estimated application rates for use by FG&E in 2017. FG&E proposes only two methods of application, cut-stump treatment and low-volume foliar treatment. Per discussion in this YOP and the Companies VMP, the herbicides, tank mixes, application rates and timing/frequency of application comply with the limited spray sensitive area requirements for all sensitive areas and will be applied on the full length and width of the companies' rights-of-way.

Proposed Herbicide Mixes

Trade Name	**EPA #**	**Active Ingredient**	**Mixture**	**Treatment**	**Estimated rate of product per acre**
Rodeo Arsenal Powerline	62719-324 241-431	Glyphosate Imazapyr	40-50% in water 3% to 5% in water	Stump (CST)	16 – 64 oz.
Krenite S Escort XP	352-395 432-1549	Fosamine Ammonium Metsulfuron Methyl	5% - 10% 2-4 oz. per 100 gal	Selective Foliar	32 – 64 oz 0.25 - .0.50 oz.
Krenite S Arsenal Powerline	352-395 241-431	Fosamine Ammonium Imazapyr	5% - 10% 0.125% – 0.5%	Selective Foliar	32 – 64 oz 0.25 - .0.50 oz
Rodeo Arsenal Powerline	62719-324 241-431	Glyphosate Imazapyr	3% - 5% 0.125% – 0.5%	Selective Foliar	32 – 64 oz 0.25 - .0.50 oz
Cambistat	74779-3	Paclobutrazol	8.3%	TGR (Basal)	Per tree (see application guide)

Footnote on carriers and adjuvants: The carrier for cut stump application will be water. Carrier for foliar applications will be water. Induce or Aqua Fac or equivalent surfactant will be added to foliar tank mix. Point Blank or equivalent anti-drift agent will be added to foliar mixes as needed.

8: Procedures and Locations for Handling, Mixing and Loading Herbicide Concentrates

The Companies' retain independent contractors to accomplish all aspects of handling, mixing and loading herbicide concentrates. As a contractual term, contractors are required to comply with all applicable laws, regulations and rules pertaining to handling, mixing and loading herbicide concentrates.

The majority of mixing, handling and loading of herbicide concentrates is done at the contractor's place of business. If it is necessary to handle, mix or load herbicide concentrates at any other location, the contractor is required to comply with herbicide label directions and 333 CMR 11 requirements regarding set-backs from sensitive areas.

FG&E requires the following standards to be followed if handling and mixing are carried out on company property or rights-of-way:

1. No handling, mixing or loading of herbicide concentrated will be done on rights-of-way within the buffer zones adjacent to any drinking water supplies or surface water or within 100 feet of any other sensitive area.
2. No water will be pumped from open sources in the field.
3. Hoses used for water will not be used to pump or mix herbicides.

9: Individuals Supervising the YOP

Overall supervision for development and implementation of the YOP will be performed by:

Sara Sankowich
System Arborist
Fitchburg Gas and Electric Light Company
285 John Fitch Highway
Fitchburg, MA 01420-8207

The Company System Arborist is ultimately responsible for preparation, implementation of and compliance with this 2017 YOP. The System Arborist's duties include: work scheduling, prescription of herbicides and application methods, procurement of necessary permits, municipal notifications, contractor selection, provision of technical expertise and liaison between Company right-of-way easement landowners, neighbors, local and state officials and other interested parties and field supervision of vegetation management contractors.

Sara Sankowich has 15 years of experience in electric utility vegetation management, a degree in Forestry and is an International Society of Arboriculture Certified Arborist.

This YOP was drafted by Sara Sankowich in consultation with Thomas E. Sullivan from Energy Initiatives Group, LLC. Tom Sullivan has worked in the electric utility vegetation management business for over thirty years. He formerly managed the Transmission Forestry Department and VMP's and YOP's for National Grid. He has degrees in Forestry and Biology and is a Massachusetts Licensed Forester and International Society of Arboriculture Certified Arborist.

10: Contractor that will Perform Herbicide Applications

To be determined in mid-2017 and provided in the municipal notification letters.

11: Remedial Spill and Emergency Plan

This section is offered as a general procedural guide for responding to chemical spills or related accidents (related accidents include but are not limited to fire, poisoning and vehicle accidents). The Company contracts with independent, professional, certified herbicide applicators that are responsible for the containment, clean up and reporting of chemical spills or accidents. The following is, therefore, only a guide to the information sources that *shall be* available to the treatment crew in the event of a chemical spill or emergency situation:

TYPES OF CHEMICAL SPILLS THAT REQUIRE ACTION

Chemicals include, but are not limited to the following:

- Herbicides
- Bar and Chain Oil
- Motor & Hydraulic Oil
- Diesel Fuel
- Gasoline
- Title 3 Hazmat Materials

REQUIRED SPILL RESPONSE EQUIPMENT

As a minimum, the ROW crew should have available on the job site:

- VMP and YOP with emergency contact lists
- MSDS and product labels
- Product Fact Sheets
- Appropriate absorbent material such as “speedi dri” or “soak up”
- Shovel
- Broom
- Flagging
- Leak proof container
- Heavy-duty plastic bags

PERSONAL CONTACT

In the event of **Personal Contact** with hazardous chemicals:

- Wash affected area with plenty of soap and water
- Change clothing which has absorbed hazardous chemicals
- If necessary, contact a physician
- If necessary, contact the proper emergency services
- If necessary, follow the procedures for Major or Minor Spills as outlined below
- Avoid breathing the fumes of hazardous chemicals

REFERENCE TABLES (INFORMATION SUBJECT TO CHANGE AS NECESSARY)

Table 1: Herbicide Manufacturers

MANUFACTURER	TELEPHONE NUMBER	SPECIAL INSTRUCTIONS
BASF Corporation	800-832-4357	Arsenal
E.I. du Pont de Nemours and Company	800-441-3637	Krenite & Escort
Dow Agro Sciences	800-992-5994	Rodeo & Garlon
Rainbow Treecare Scientific Advancements	800-888-8372	Cambistat

Table 2: State Agencies

STATE AGENCY	TELEPHONE NUMBER	SPECIAL INSTRUCTIONS
Massachusetts Pesticide Bureau	617-626-1700	A.S.A.P (within 48 hours)
Massachusetts Department of Environmental Protection, Emergency Response Section	Main Office: 888-304-1133 Central Region: 508-792-7650	for emergencies involving reportable quantities of hazardous materials; required info: City/town, Street address, Site name (if applicable), material
Massachusetts Poison Information Centers	800-682-9211	for medical emergencies involving suspected or known pesticide poisoning symptoms

Table 3: Emergency Services

EMERGENCY SERVICE	TELEPHONE NUMBER
Massachusetts State Police, Central Office	617-566-4500 or 911
ChemTrec	800-424-9300

Fitchburg Gas and Electric's contact in the case of a spill or accident:

The FG&E System Control telephone listed below.

Table 4: Local Emergency Numbers

Municipality	Emergency Services	Board of Health	Town Hall
Fitchburg	911	**978-829-1870**	**978-829-1801**

CLEAN-UP PROCEDURES

Education and attention will constantly be directed at accident and spill prevention, however, the following is a guideline in the even the event of a spill:

REPORTABLE SPILLS (Spills of reportable quantity of material): FOLLOW STEPS 1 – 11

NON-REPORTABLE SPILLS: FOLLOW STEPS 1, 2, 3, 4, 8, 9, 10 & 11 and contact the Company representative.

Table 5: HERBICIDE SPILL CHECK LIST

Order	ACTION		Done (v)
1	Use any and all PPE as directed by product label or MSDS.		
2	Cordon-off spill area to unauthorized people and traffic to reduce the spread and exposure of the spill.		
3	Identify source of spill and apply corrective action, if possible stop or limit any additional amounts of spilled product.		
4	Contain spill and confine the spread by damming or diking with soil, clay or other absorbent materials.		
5	Report spills of "reportable quantity to the Massachusetts DEP and DAR: See 310 CMR 40.00		
	Massachusetts DAR, Pesticide Bureau	617-626-1700	
	Massachusetts Department of Environmental Protection, Division of Hazardous Waste	Main Office: 888-304-1133 Central Region: 508-792-7650	
6	If the spill cannot be contained or cleaned-up properly, or if there is a threat of contamination to any bodies of water, immediately contact any of the following applicable emergency response personnel:		
	local fire, police, rescue	911	
	FG&E: System Control	603-294-5102	
	FG&E: Environmental Dept: Tom Murphy	603-379-3829	
	FG&E: Forestry: Sara Sankowich	603-379-3833	
	Chemtrec	800-424-9300	
	additional emergency personnel		
	If there is a doubt as to who should be notified, contact State Police, Central Office	617-566-4500 or 911	
7	Remain at the scene to provide information and assistance to responding emergency clean-up crews.		
8	Refer to the various sources of information relative to handling and clean-up of spilled product.		
9	If possible, complete the process of "soaking up" with absorbent materials.		
10	Sweep or shovel contaminated products and soil into leak proof containers for proper disposal at approved location.		
11	Spread activated charcoal over spill area to inactivate any residual herbicide.		

Appendix 1

YOP Maps

Appendix 2

333 CMR 11.00

Appendix 3

Sensitive Area Illustration

Appendix 4

Herbicide Labels

Appendix 5

Herbicide Fact Sheets